

Ethernet speeds in 2013: not a matter of 400G or 1TB, but cheaper 100G

The demand for bandwidth continues to grow; no matter if one believes Cisco's projections or have estimates from other companies or consultants, reality is that traffic is growing and networks should prepare themselves with higher speeds and capacity. How much? This is the million-dollar question. Nobody knows for sure, what is known is that when it comes to Ethernet speeds increase, costs rule, even when it seems operators only demand more speeds without considering such factor, they always want faster standardization.

Operators that are expanding their networks already know the market offers Ethernet speeds at 40G and 100G, while they already call the Institute of Electrical and Electronics Engineers (IEEE) to initiate the process to reach 400G and 1Tb. It's that simple, operators want higher speeds and want them yesterday. And as the market seems unable to live without a speeds debate, interests coming from all angles physically possible are already debating whether the development should be in 400G or go directly to 1Tb.

TeleSemana.com had the opportunity last Friday to talk to John D'Ambrosia, Ethernet "guru" and Chief Ethernet Evangelist, Distinguished Engineer at Dell, and chair of several efforts within IEEE seeking to develop the next Ethernet speeds phase. D'Ambrosia long career in the Ethernet standardization business lets you undo in less than an hour (the length of our phone interview) the whole debate that sometimes we get to hear, read or see in person at industry events.

There are many realities in the market, but one that is universal, and is the price or cost of developing and implementing a new technology or standard. A clear example: for many operators, the 40G market is not considered a success, however the large data centers would argue just the opposite, because it is they who are driving 40Gigabit Ethernet deployments.

Now jumping into the debate between 400G and 1Tb, where on one hand there is the fear of operators that traffic demand will fall over them with the force of a tsunami, and the costs of tackling it. Perhaps, in the debate between 400G and 1TB, there is an "expertise" component that allows for a better development planning, because the IEEE has had time itself, while market players requested more speed, to evaluate how traffic is shaping itself in networks, and better understood patterns of use can help establish a roadmap, perhaps lacking when 40G and 100G were the center of the debate.

The IEEE concluded, in a report that explored future industry bandwidth requirements, that in 2015 traffic would be 10 times that experienced in 2010, and 100 times in 2020.ⁱ D'Ambrosia joked about his "fear" to what lies ahead, but also some personal relief, as the IEEE 8082.3 Bandwidth Assessment report suggest he will have a much longer career developing Ethernet standards for higher speeds. His "fear" is not being able to meet market expectations, which means not just having Ethernet speed ready when needed but at the cost that makes sense to those

operators that fiercely demand more speeds without necessarily considering cost. Today 1Tb could be achieved, but its cost would be so high that it would potentially limit its broad market potential.

For 2013 the main development is not so much about the 1Tb or 400G, but to make 100G cheaper; that simple. Because in the end, with 100G being cheaper, the standard can move quicker to 400G at a cost effective price point. And although 100G is still "young" in the market, its future is quite bright, not only because operators are deploying it, but because according to Light Reading, 170 operators are formally committed to the deployment of 100G networks.

It will remain healthy to debate between 400G and 1TB, simply because the market needs certainty to the increasing traffic demand. But in 2013, the aim will be cheaper 100G.

¹ IEEE 802.3 Ethernet Bandwidth Assessment, http://www.ieee802.org/3/ad_hoc/bwa/BWA_Report.pdf, July, 2012.